T.P.C.

BULLETIN E

Model "S"

HIGHWAY CROSSING SIGNAL

and

MAST MOUNTED GATE ASSEMBLY

T.P.C.

TRANSPORT PRODUCTS CORPORATION

3008 Magazine Street

LOUISVILLE 11, KENTUCKY

D. V. MAHER & CO.
AGENT
900 MARSHALL BUILDING
CLEVELAND 13, OHIO

Manufacturers

of

RAILROAD SIGNAL EQUIPMENT SINCE 1922

AUTOMATIC CROSSING GATES SINCE 1930

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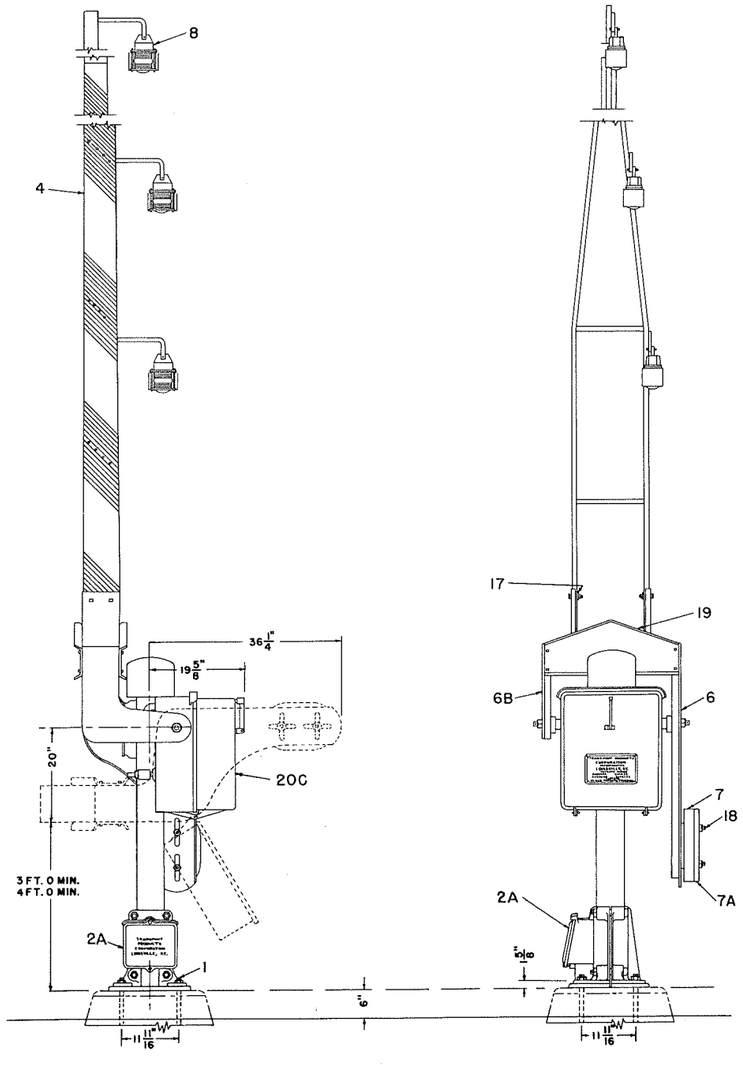
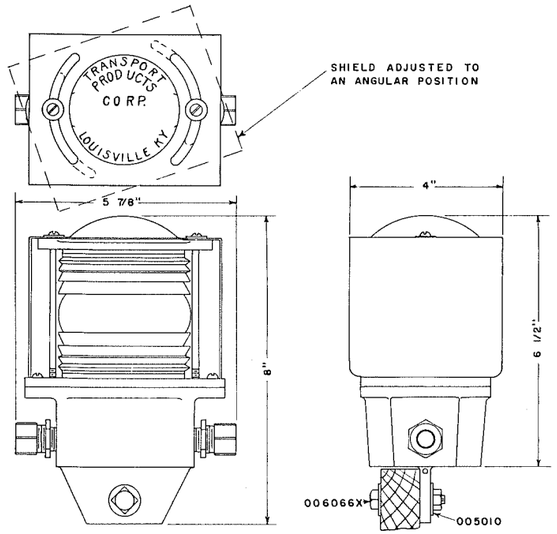


ASSEMBLY NO. SS-24

		DRAWING NUMBER
12.	Number of Tracks Signs, Reflector Type, Vitreous Enamel (Specify Numeral) AAR 164513	80490-7X
12A.	Number of Tracks Signs, Reflector Type, Synthetic Enamel, (Specify Numeral), AAR 164512	80490-6X
12B.	Number of Tracks Signs, Cast Iron, (Specify Numeral), AAR 16441	41049
13.	Stop On Red Signal Sign, Vitreous Enamel, AAR 16468	80474-7X
13A.	Stop On Red Signal Sign, Synthetic Enamel, AAR 16467	80474-6X
14.	Extension Bracket with Adapter and U Bolts for 5" I.D. Pipe	70510-1Y
15.	Extension for Flashing Light Cross-arm	70511
15A.	Extension for Flashing Light Cross-arm with Sidewalk Arm Clearance	70511-1
16.	Flashing Light Unit Consisting of One Cross-arm with Lamp on Each End with 30° Horizontal Spread 15° Downward Deflection with 10 Volt, 18 Watt S.C.B.B. S11 Bulb Unless Otherwise Specified. Two Complete Units Furnished for Two-Way Indication	41400-22A
17.	Washer Plate, AAR 14914	70599
18.	Counterweight Bolt Assembly *(Specify Length of Street Arm)*	70757X
19.	Gate Arm Support	70583-1AX
20.	Model "S" Crossing Gate Mechanism, 90° Operation, with Partial Power-Down Arrangement and Motor Snub Relay, for Roadway arm only	70600B
20A.	Model "S" Crossing Gate Mechanism, 90° Operation, with Partial Power-Down Arrangement and Motor Snub Relay, for Roadway and Sidewalk Arms	70600-1A
20B.	Model "S" Crossing Gate Mechanism 90° Operation, with Partial Power-Down Arrangement and Motor Snub Relay, for Roadway Arm Only and Mounted on Stub Pole with Two Large Bearings and Heavy Duty Spring Which is Arranged to Swing Away from the Track, with Spring Return and Horizontal Motor Cut Out Switch	70600-2A
	NOTE: All of the above mechanisms Can Be Furnished with Rectifier Mounted in Door for 110 Volt, 60 Cycle A. C. Operation.	
21.	Sidewalk Arm Support	70572R
22.	2" Flexible Conduit	70692
23.	Stub Gate Mast 6'-0" of 5" I.D. Steel Pipe	70519-3

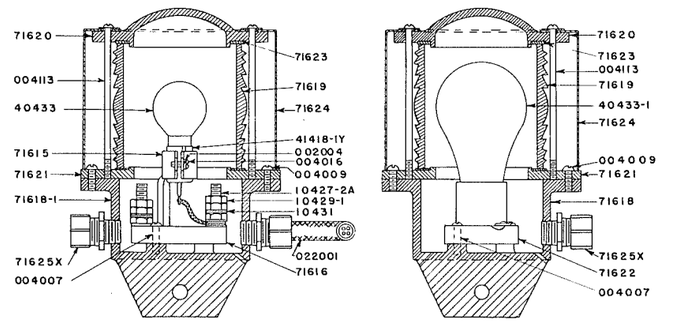
T.P.C. TRANSPORT PRODUCTS CORPORATION

Gate Arm Lamp



FRONT ELEVATION
OF GATE LAMP WITH TWO CONNECTORS

SIDE ELEVATION
OF GATE LAMP



No. 71617X LAMP WITH TWO CONNECTORS, AS SHOWN.
No. 71615X LAMP WITH ONE CONNECTOR, NOT SHOWN.

Above Lamps Have Single Contact Candelabra BAYONET SOCKETS.

No. 71617-1X LAMP WITH TWO CONNECTORS, NOT SHOWN.
No. 71615-1X LAMP WITH ONE CONNECTOR, AS SHOWN.

Above Lamps Have Edison Medium SCREW SOCKETS.

MODEL "S"

MAST MOUNTED GATE ON STUB POLE

ASSEMBLY NO. S-45S

WITH GATE AND COUNTERWEIGHT ARMS
TO ACCOMODATE STREET ARMS

39′ to 45′

ORDERING REFERENCE

MODEL "S" MAST MOUNTED AUTOMATIC GATE
ON STUB POLE, ASSEMBLY NO. S-45S

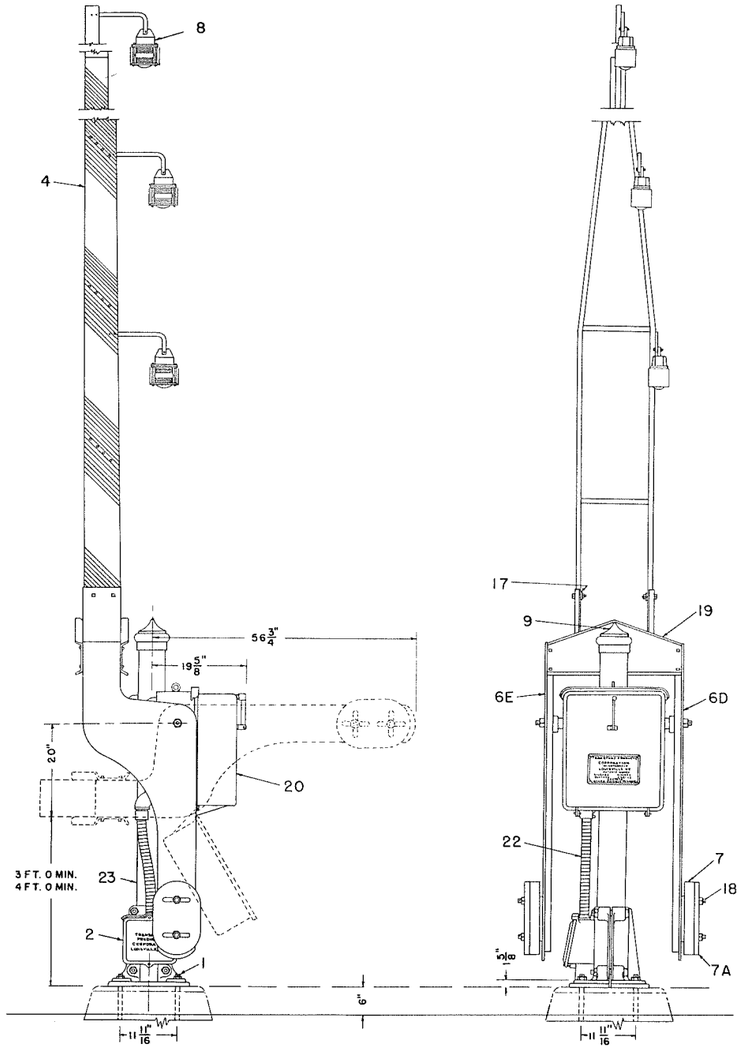
SPECIFY

1. Length of street arm.
2. Crossing Bell (Type 222FR will be furnished unless otherwise specified).
3. Any variation of assembly as detailed on opposite page.
   See Page 22 for detailed ordering references.

NOTE: All mechanisms are furnished with partial power-down arrangement and motor-snub relay.

All mechanisms are arranged so that side-walk arms can be installed in the field without machine work or dismantling of mechanism.

If specified the side-walk arm shaft will be installed with protecting cap for exposed end.



ASSEMBLY NO. S-45S

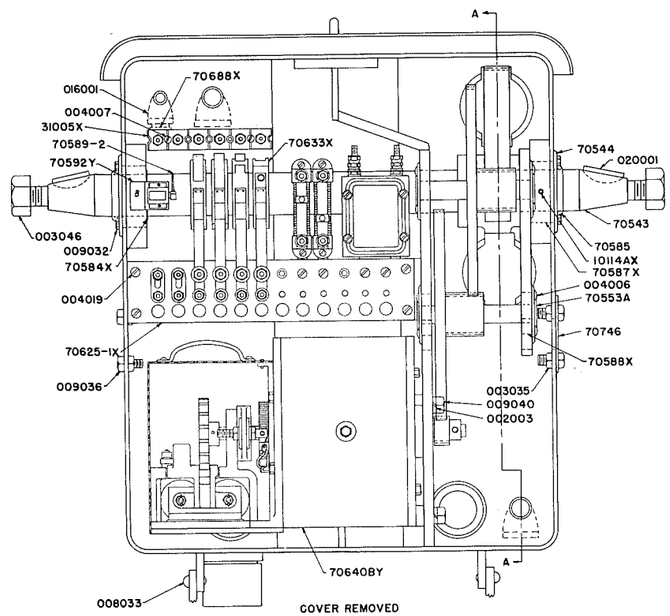
Gate Arm Lamp References

GATE ARM
LAMP ASSEMBLIES

71615X	Gate arm lamp with single cable outlet and single contact candelabra bayonet socket.
71615-1X	Gate arm lamp with single cable outlet and Edison medium screw socket.
71617X	Gate arm lamp with double cable outlet and single contact candelabra bayonet socket.
71617-1X	Gate arm lamp with double cable outlet and Edison medium screw socket.

PARTS

10427-2A	Terminal post.
10429-1	A.A.R. No. 10707 clamp nut.
10431	A.A.R. No. 10708 washer.
40433	Incandescent electric lamp, S-11 bulb single contact candelabra bayonet base specify operating voltage and wattage.
40433-1	Incandescent electric lamp, S-19 bulb Edison medium screw base, 110 volts, 50 watts.
41418-1Y	Bayonet socket assembly.
71615	Bayonet socket support.
71616	Terminal block.
71618	Base for one cable outlet.
71618-1	Base for two cable outlet.
71619	Fresnel lense, red.
71620	Lens cover.
71621	Lens base.
71622	Edison medium screw socket.
71623	Gasket.
71624	Shield.
71625X	Connector, squeeze type.
002004	No. 6 steel lock washer, tin plated.
004007	10-32 x ¾" round head brass machine screw, nickel plated.
004009	10-32 x ½" round head brass machine screw, nickel plated.
004016	6-40 x ⅜" round head brass machine screw, nickel plated.
004113	10-32 x 3⅞" round head brass machine screw.
005010	5/16" standard steel washer.
006066X	5/16" x 1¾" square head machine bolt.
022001	4 conductor cable, specify length.



ORDERING REFERENCES
For
DETAILED PARTS
Model "S" Gate Mechanisms

	DRAWING NUMBER
No. 1641 Alemite Hydraulic Fitting	10114AX
A.A.R. No. 10544 Six Post Terminal Block Assembly	31005X
2" Squeeze Type Flexible Conduit Connector	41270-2X
5" Mast Clamp	70507A
Housing (Drilled For Side-Walk Arm)	70521-1AX
Bumper Face Complete	70538X
Compression Spring	70540
Adjusting Plug	70541
Bumper Cap Complete	70542X
Main Shaft	70543
2" Shaft Seal Plate	70544
Main Sector Gear	70545-1A
½" Square Key	70547
Gear Assembly	70548AR
Gear Assembly	70548AL
Bearing Cover	70553A
Cover Assembly	70555Y
Main Shaft Retaining Ring	70584X
2" "O" Ring	70585
Ventilator Complete	70586X
Roller Bearing For Main Shaft	70587X
Ball Bearing For Gear Staff	70588X
Counter Screw Eye	70589-2
Counter Assembly Complete with Mounting Plate and Alemite Fitting	70592Y

MODEL "S"

MAST MOUNTED GATE ON STUB POLE

ASSEMBLY NO. S-38S

WITH GATE AND COUNTERWEIGHT ARMS TO ACCOMODATE STREET ARMS

25′ to 38′

ORDERING REFERENCE

MODEL "S" MAST MOUNTED AUTOMATIC GATE ON STUB POLE, ASSEMBLY NO. S-38S

SPECIFY

1. Length of street arm.
2. Crossing Bell (Type 222FR will be furnished unless otherwise specified).
3. Any variation of assembly as detailed on opposite page.
   See Page 22 for detailed ordering references.

NOTE: All mechanisms are furnished with partial power-down arrangement and motor-snub relay.

All mechanisms are arranged so that side-walk arms can be installed in the field without machine work or dismantling of mechanism.

If specified the side-walk arm shaft will be installed with protecting cap for exposed end.

MODEL "SS"

MAST MOUNTED GATE ON STUB POLE
ARRANGED TO SWING AWAY FROM THE TRACK
AND
WITH SPRING RETURN

ASSEMBLY NO. SS-38

WITH GATE AND COUNTERWEIGHT ARMS TO ACCOMODATE STREET ARMS

25′ to 38′

This assembly is the same as shown on Drawing SS-24 except gate and counterweight support arms are used on both sides.

ORDERING REFERENCE

MODEL "SS" MAST MOUNTED GATE ON STUB POLE, SWING TYPE, ASSEMBLY NO. SS-38

SPECIFY

1. Length of street arm.
2. For direction of swing state whether to be installed as an approach or outlet gate.

See Page 22 for detailed ordering references.

NOTE: All mechanisms are furnished with partial power-down arrangement, motor-snub relay and horizontal cut-out switch.

Crossing Bell cannot be mounted at top of mast on Model "SS" Gate due to return spring cover.

MODEL "SS"

MAST MOUNTED GATE ON STUB POLE
ARRANGED TO SWING AWAY FROM THE TRACK
AND
WITH SPRING RETURN

ASSEMBLY NO. SS-45

WITH GATE AND COUNTERWEIGHT ARMS TO ACCOMODATE STREET ARMS

39′ to 45′

This assembly is the same as shown on Drawing SS-24 except longer gate and counterweight support arms are used on both side as shown on Assembly S-45, Page 6.

ORDERING REFERENCE

MODEL "SS" MAST MOUNTED GATE ON STUB POLE, SWING TYPE, ASSEMBLY NO. SS-45

SPECIFY

1. Length of street arm.
2. For direction of swing state whether to be installed as an approach or outlet gate.

See Page 22 for detailed ordering references.

NOTE: All mechanisms are furnished with partial power-down arrangement, motor-snub relay and horizontal cut-out switch.

Crossing Bell cannot be mounted at top of mast on Model "SS" Gate due to return spring cover.

ORDERING REFERENCES
For
DETAILED PARTS

Model "S" Highway Crossing Signals And Mast Mounted Gate Assemblies

		DRAWING NUMBER
1.	Anchor Bolts 1" x 36" Long Complete, AAR 11079	30805X
2.	Junction Box Base for 5" Mast, AAR 1471A	70502X
2A.	Junction Box Base for 5" Pipe with Conduit Opening Capped	70502-2X
3.	Steel Pipe, 5" I.D. x 13'-0" Long	70519
4.	Highway Crossing Gate Arm Complete (Specify Length)	70518Y
4A.	Highway Crossing Gate Arm Less Lamps, AAR 14913 (Specify Length)	70518X
5.	Sidewalk Arm (Specify Length)	70520X
6.	Gate and Counterweight Arm Assembly, Right Hand	70750R
6A.	Gate and Counterweight Arm Assembly, Left Hand	70750L
6B.	Gate Support Arm, Left Hand	70735L
6C.	Gate and Counterweight Arm Assembly With Extended Hub for Sidewalk Arm Clearance	70750-1R
6D.	Gate and Counterweight Arm Assembly for Street Arms 39' to 45', Right Hand	70750-2R
6E.	Gate and Counterweight Arm Assembly for Street Arms 39' to 45', Left Hand	70750-2L
7.	Counterweight 2", 66 Lbs	70755
7A.	Counterweight 1", 33 Lbs	70754
8.	Gate Arm Lamp, Swinging Type	71615-2X
8A.	Gate Arm Lamp with Single Cable Outlet (Pages 24 and 25)	71615X
8B.	Gate Arm Lamp with Double Cable Outlet (Page 24 and 25)	71617X
9.	Pinnacle 5" I.D. Pipe, AAR 12451	41256X
10.	Crossing Bell for 5" I.D. Pipe (Type 222-FR)	40200
11.	Railroad Crossing Sign, Reflector Type, Vitreous Enamel, AAR 16429	80510-7X
11A.	Railroad Crossing Sign, Reflector Type, Synthetic Enamel, AAR 16428	80510-6X
11B.	Railroad Crossign Sign, Cast Iron, AAR 16401	41046

MODEL "SS"

MAST MOUNTED GATE ON STUB POLE
ARRANGED TO SWING AWAY FROM THE TRACK
AND
WITH SPRING RETURN

ASSEMBLY NO. SS-24

WITH GATE AND COUNTERWEIGHT ARMS TO ACCOMODATE STREET ARMS

14' to 24'

ORDERING REFERENCE

MODEL "SS" MAST MOUNTED GATE ON STUB POLE, SWING TYPE, ASSEMBLY NO. SS-24

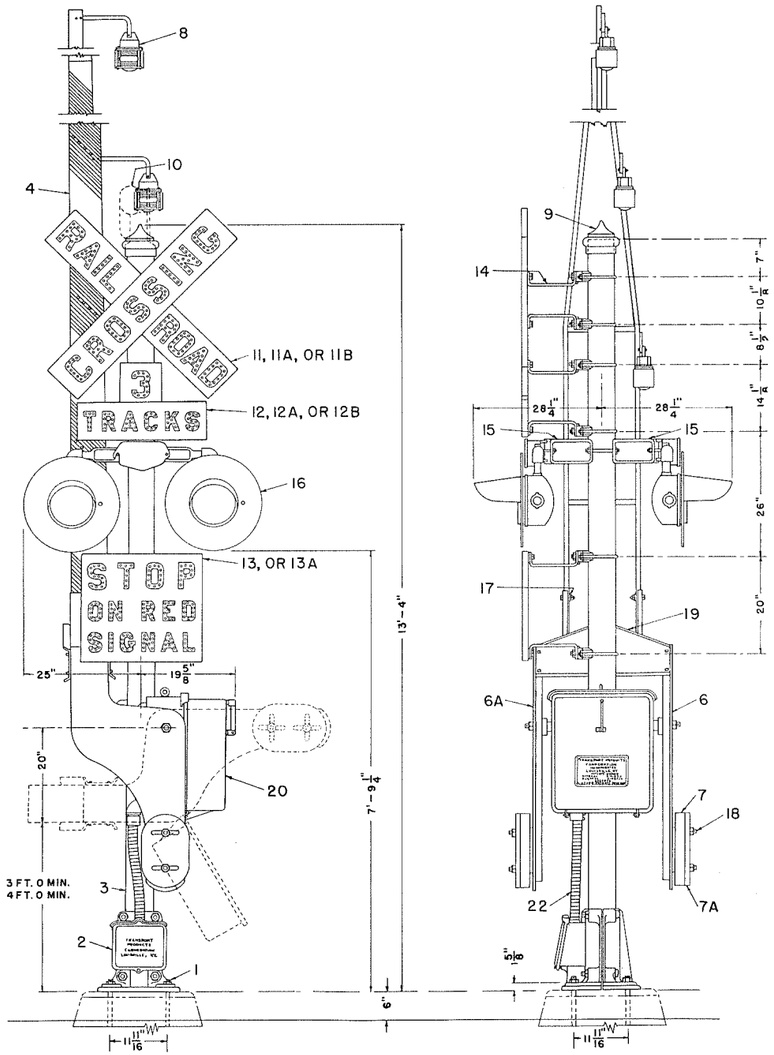
SPECIFY

1. Length of street arm.
2. For direction of swing state whether to be installed as an approach or outlet gate.

See Page 22 for detailed ordering references.

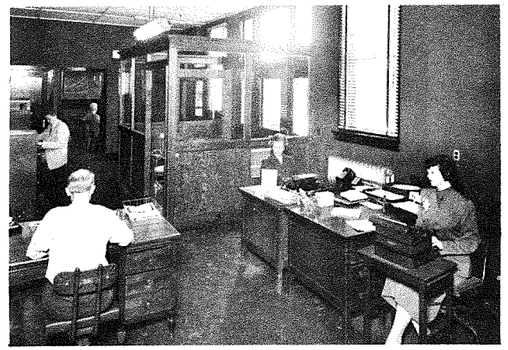
NOTE: All mechanisms are furnished with partial power-down arrangement, motor-snub relay and horizontal cut-out switch.

Crossing Bell cannot be mounted at top of mast on Model "SS" Gate due to return spring cover.

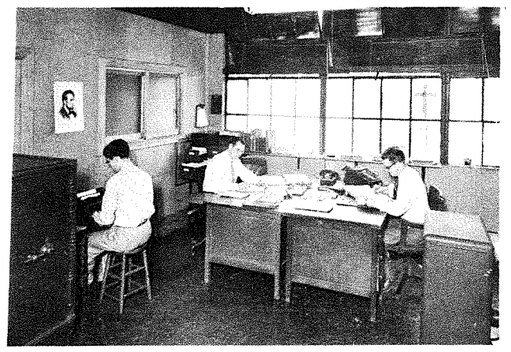


ASSEMBLY NO. S-38

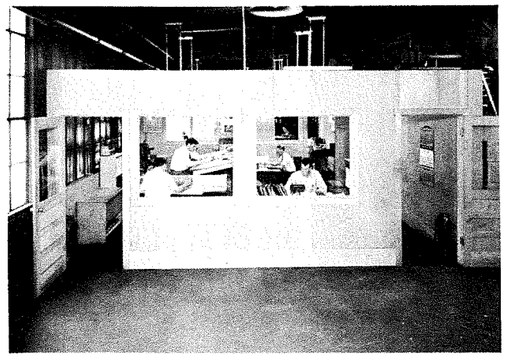
General Office of Transport Products Corporation



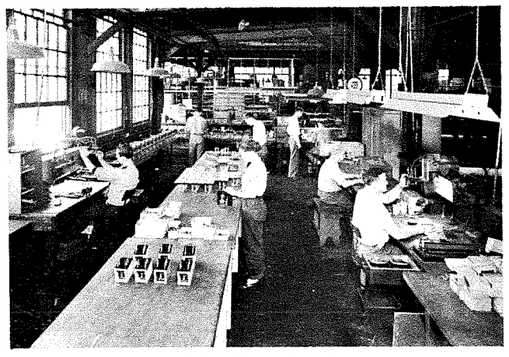
Interior View of General Office



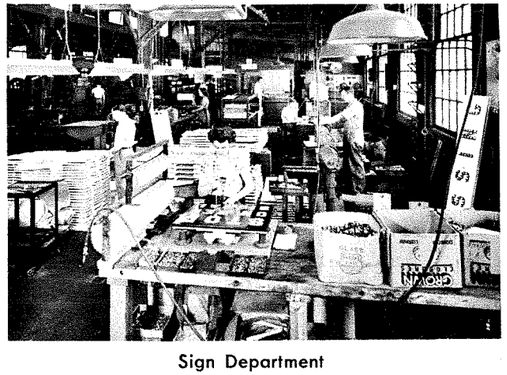
Accounting Department



Engineering and Production Department



Relay Department



Sign Department

TRANSPORT PRODUCTS CORPORATION T.P.C.

MODEL "S"

HIGHWAY CROSSING SIGNAL AND MAST MOUNTED GATE

ASSEMBLY NO. S-24

WITH GATE AND COUNTERWEIGHT ARMS TO ACCOMMODATE STREET ARMS

14′ to 24′

ORDERING REFERENCE

MODEL "S" HIGHWAY CROSSING SIGNAL AND AUTOMATIC GATE, ASSEMBLY NO. S-24

SPECIFY

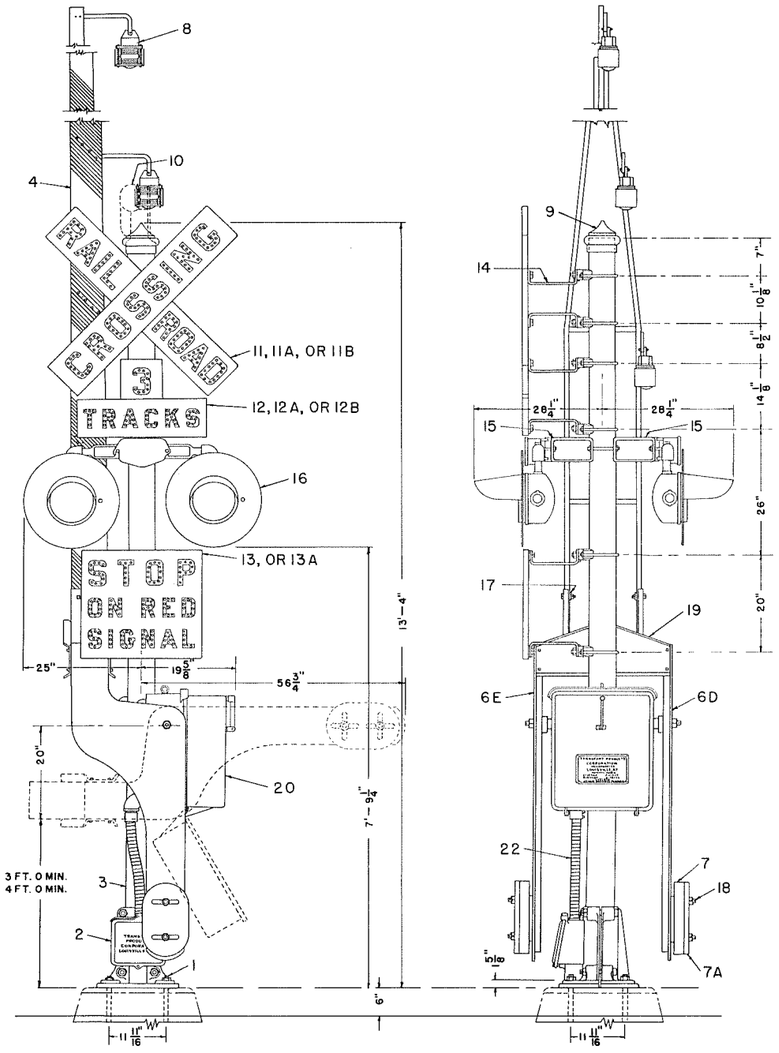
1. Length of street arm.
2. Numeral on "Number of Tracks" sign.
3. Crossing Bell (Type 222FR will be furnished unless otherwise specified).
4. Any variation of assembly as detailed on opposite page.

See Page 22 for detailed ordering references.

NOTE: All mechanisms are furnished with partial power-down arrangements and motor-snub relay.

All mechanisms are arranged so that side-walk arms can be installed in the field without machine work or dismantling of mechanism.

If specified the side-walk arm shaft will be installed with protecting cap for exposed end.

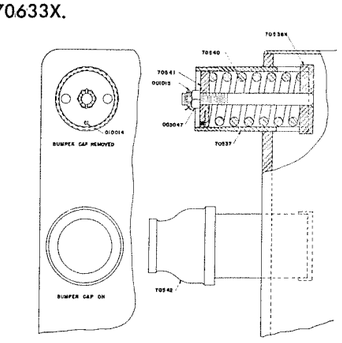


ASSEMBLY NO. S-45

4. To adjust circuit controller contacts see Figures 1 and 2 page 31. To adjust the opening and closing of these contacts at proper position of gate arm loosen cap screw #009030 and set cam (70633X) to desired position, then retighten cap screw. If unable to reach cap screw head with gate in vertical position lower the gate, then allow motor to raise gate until cap screw is accessable, and open and block "up" limit contact. This will hold gate in desired position while cam is being adjusted.

   The contact springs are properly adjusted at the factory and should need no further adjustment when a new gate mechanism is installed. However, should they lose their adjustment by accident or after long service they should be adjusted as follows:

   Bend 70632 Reinforcing Finger so that its upper end does not touch 70630X Movable Contact Spring at A, as shown in Figure 1; then bend 70630X so that the space between 70631 Cam Follower and the low portion of 70633X Contact Cam is exactly 5/64" at B, as shown in Figure 1; then bend 70632 back so that it touches 70630X at A and deflects it enough to increase space B to 3/32", as shown in Figure 2; then bend 70629X Fixed Contact Spring so that the contact opening at C is exactly 1/16", as shown in Figure 2. All of the above adjustments must be made with 70631 not touching the high part of 70633X.



5. To adjust the spring gate stops for horizontal and vertical positions, first adjust No. 003047 Nut (Figure 3) to get the desired spring compression, and replace the Cotter Pin No. 001015; next, adjust No. 70538X Bumper Face if the above adjustment has moved it from the proper position. To do this back out No. 010014 set screw and with a pin wrench fitted in the two holes in No. 70541 Adjusting Plug, screw the plug in or out to get the Bumper Face in the desired position. Then tighten No. 010014 Set Screw to lock the Adjusting Plug. This adjustment does not disturb the spring tension of the gate stop. Allow 1/16" between gear segment and Bumper Face when gate is in vertical position.

6. Resistance unit adjustment. To get the correct descent time, place a piece of paper between the points of the 45-93 dgree closed contact shown in the circuit on pages 32 and 30 and adjust the variable snubbing resistance to the right.

After this adjustment has been made remove the paper from the contacts. The AAR specification descent time is from 10 to 15 seconds.

The power down variable resistance to the left is set at the factory and should not require further adjustment. If this adjustment is lost it should be reset to limit the power down stalling current to 10 amperes.

7. The motor drawings on pages 28 and 29 shows the details of the hold clear mechanism. The view to the left is facing the back of the motor and hold clear coils. The view at the top of page 28 is an end view of the motor and the hold clear coils. The pick up coils No. 70665 are to the left and the hold clear coils No. 70665-1 are to the right, or nearest the hold clear armature No. 70647X. The pick up coils are 25 ohms resistance and the hold clear coils are 500 ohms. The hold clear mechanism should be adjusted to release at 6 volts. This adjustment is made by increasing or decreasing the compression of spring No. 70651. If the release is too low remove cotters which lock nuts No. 70650, turn No. 70650 nuts to right until desired release is obtained and lock nuts with cotters. If the release is too high adjust as above except turn nuts to left until desired release is obtained.

   The air gap between the hold clear armature and the pole pieces is .020" on new mechanisms, and should this gap wear to .015" the armature (70647X) should be replaced. When the hold clear armature is in the released position the gap between the roller in the hold clear armature assembly and the points of the teeth in the No. 70658X Clutch should not be less than 1/32".

8. The motor and snubbing relay which is mounted on the circuit controller terminal board should be adjusted to have a direct pickup of 7.6 to 8.0 volts and a minimum drop-away of 4.0 volts. The contact slide should be .025" measured at the armature stop pins. The contact opening of both the front and the back contact should be .035". The armature air gap should be .015".

9. Clean the motor commutator occasionally with a dry clean chamois. A lint free clean cloth may also be used. Do not use oil on the commutator; if it is very dirty carbon tetrachloride can be used to clean it. Replace the motor brushes when they have worn to a length of between 5/8" and 3/4". If the brushes are not allowed to get too short they will have the proper pressure against the commutator. Seat new brushes with 3/0 sand paper; do not use emery for this purpose. The bronze brush holders should be spaced not less than 1/16" from the commutator. The motor armature and the hold clear armature bracket should have between .010" and .025" end play.

10. The ball bearings of the motor and gear staffs are fully sealed and prelubricated, and require no further lubrication for the life of the bearing. The main shaft roller bearings are provided with grease fittings and these two bearings should be lubricated with a good grade of ball and roller bearing grease about every twelve months. Coat the gear teeth with a thin film of grease about every six months. The hold clear ratchet assembly No. 70658X should be lubricated with light machine oil about every six months. To do this, drop oil between the nickel plated side plates and the notched holding ring. The trunnion and roller of No. 70649A Hold Clear Armature Bracket should be lubricated with a few drops of light oil about every six months.

MODEL "S"

HIGHWAY CROSSING SIGNAL AND MAST MOUNTED GATE

ASSEMBLY NO. S-38

WITH GATE AND COUNTERWEIGHT ARMS TO ACCOMMODATE STREET ARMS

25′ to 38′

ORDERING REFERENCE

MODEL "S" HIGHWAY CROSSING SIGNAL AND AUTOMATIC GATE, ASSEMBLY NO. S-38

SPECIFY

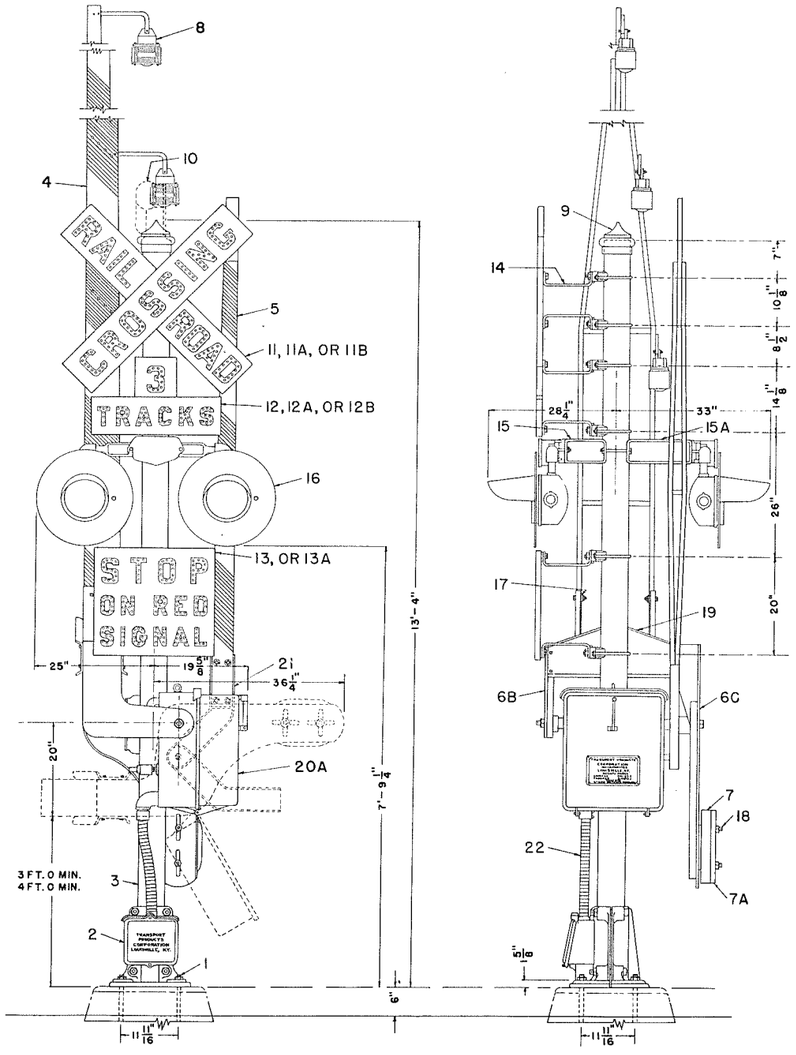
1. Length of street arm.
2. Numeral on "Number of Tracks" sign.
3. Crossing Bell (Type 222FR will be furnished unless otherwise specified).
4. Any variation of assembly as detailed on opposite page.

See Page 22 for detailed ordering references.

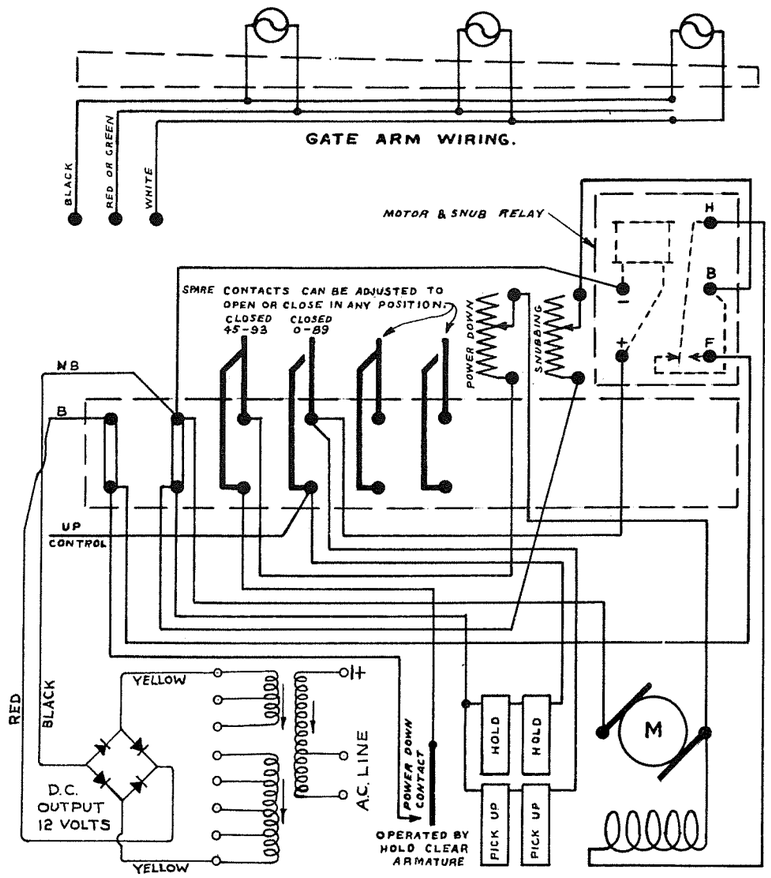
NOTE: All mechanisms are furnished with partial power-down arrangements and motor-snub relay.

All mechanisms are arranged so that side-walk arms can be installed in the field without machine work or dismantling of mechanism.

If specified the side-walk arm shaft will be installed with protecting cap for exposed end.



ASSEMBLY NO. S-24SW



Partial Power down mechanism wiring for
Model S Electric Crossing Gate
with rectifier in door for 110 volt 60 cycles A.C. Operation

INSTALLATION AND MAINTENANCE INSTRUCTIONS

Model "S" Highway Crossing Signals
And Mast Mounted Gate Assemblies

1. The Signal Section Specifications specify that the bottom of the street arm should be between 3 and 4 feet from the crown of the highway. When clamping the mechanism case to the mast the desired location can be established by placing the center of the main gate arm shaft 20 inches above the desired height of the bottom of the street arm.

2. See pages 2 to 18 for type of gate to be installed for the recommended location of the extension brackets and clamps for the signs.

3. Counterweights are supplied with each assembly for proper torque for the street arm furnished. Install the counterweights in the center of the slot in both the gate and counterweight arm and the weights. The counterweights are arranged for independently adjusting both the vertical and horizontal torque. When the gate arm is in the horizontal or 0° position the two nuts on the inside, toward the mast, are used and when the gate arm is in the vertical or 90° position the two nuts on the outside are used. With this arrangement both adjustments are made by slightly loosening the proper nuts, sliding the weights horizontally, and then tightening the nuts. By having a different set of nuts for each adjustment there is no possibility of losing the first adjustment while making the second, and the slots are so arranged that both adjustments are made by sliding the weights horizontally, never vertically against the force of gravity.

   With gate in 0° position (and side-walk arm removed if present) adjust counterweights, by sliding horizontally, until at 10 feet from center of shaft of street arm lift scale reading is five pounds. Lift gate very slightly above horizontal position to obtain most accurate scale reading. With this adjustment the gate will have a torque of fifty foot pounds in the 0° (down) position, which is correct for any length gate arm.

   Raise the gate to the 90° position and adjust counterweights, by sliding horizontally to get the scale readings shown below:

Length Of Gate Arm	Apply Scale From Center Of Shaft	Scale Reading In Pounds	Torque At 90° In Foot-Pounds
14′	8′	24	192
20′	8′	26	208
25′	8′	28	224
30′	9′	34	306
35′	9′	43	387
38′	9′	50	450
40′	10′	48	480
45′	11′	50	550

MODEL "S"

HIGHWAY CROSSING SIGNAL
AND
MAST MOUNTED GATE

ASSEMBLY NO. S-45

WITH GATE AND COUNTERWEIGHT ARMS TO ACCOMMODATE STREET ARMS

39′ to 45′

ORDERING REFERENCE

MODEL "S" HIGHWAY CROSSING SIGNAL AND AUTOMATIC GATE, ASSEMBLY NO. S-45

SPECIFY

1. Length of street arm.
2. Numeral on "Number of Tracks" sign.
3. Crossing Bell (Type 222FR will be furnished unless otherwise specified).
4. Any variation of assembly as detailed on opposite page.

See Page 22 for detailed ordering references.

NOTE: All mechanisms are furnished with partial power-down arrangements and motor-snub relay.

All mechanisms are arranged so that side-walk arms can be installed in the field without machine work or dismantling of mechanism.

If specified the side-walk arm shaft will be installed with protecting cap for exposed end.

MODEL "S"

HIGHWAY CROSSING SIGNAL
AND
MAST MOUNTED GATE WITH SIDE-WALK ARM

ASSEMBLY NO. S-38SW

WITH GATE AND COUNTERWEIGHT ARMS TO ACCOMODATE STREET ARMS

25′ to 38′

This assembly is the same as shown on Drawing S-24SW except gate and counterweight support arms are used on both sides.

ORDERING REFERENCE

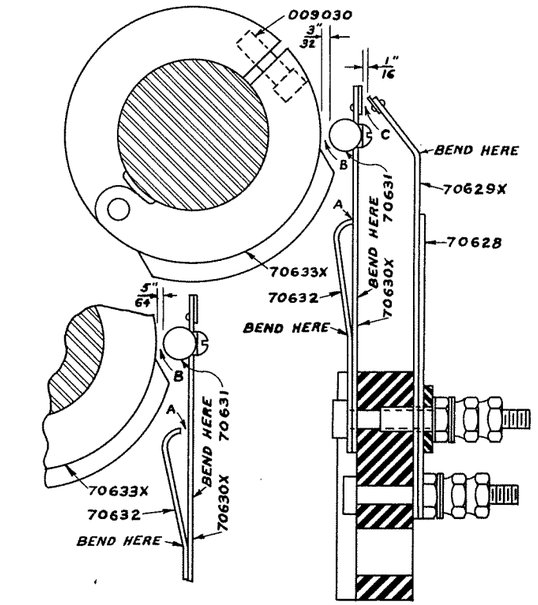
MODEL "S" HIGHWAY CROSSING SIGNAL AND AUTOMATIC GATE WITH SIDE-WALK ARM, ASSEMBLY NO. S-38SW

SPECIFY

1. Length of street arm.
2. Length of side-walk arm.
3. Numeral on "Number of Tracks" sign.
4. Crossing Bell (Type 222FR will be furnished unless otherwise specified).
5. Any variation of assembly.
   See Page 22 for detailed ordering references.

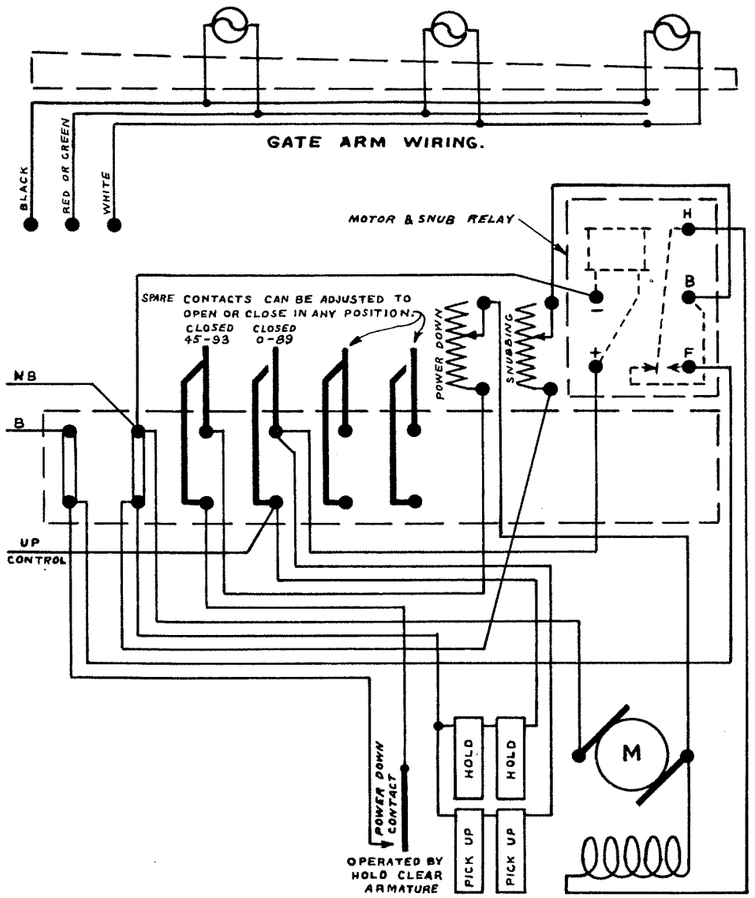
NOTE: All mechanisms are furnished with partial power-down arrangement and motor-snub relay.

Model "S" Circuit Controller Contact Arrangement



ORDERING REFERENCES
For
DETAILED PARTS
Model "S" Terminal Board

	DRAWING NUMBER
Terminal Board Assembly Complete with Motor Snub Relay, Two Resistance Units and Four Sets of Contacts	70625-1X
Contact Assembly Complete with Cam	70633Y
Terminal Post 2-1/4" Long	10427-3A
Terminal Post 2-7/16" Long	10427-4A
Clamp Nut, A.A.R. No. 10707	10429-1
Binding Nut, A.A.R. No. 10706	10430A
Washer, A.A.R. No. 10708	10431
Insulating Bushing	41414
Enclosed Motor and Snubbing Relay	70621X
Terminal Board	70625
Insulating Washer	70627
Reinforcing Spring	70628
Fixed Contact Spring Complete	70629X
Movable Contact Spring Complete	70630X
Cam Follower	70631
Reinforcing Finger	70632
Contact Cam Complete	70633X
Resistance Unit Assembly	70637Y
Terminal Post Head Lock	70687A
No. 8 Steel Lock Washer (1/16" x 3/64" Sec.) Tin Plated	002006
14-24 x 1-1/2" Round Head Brass Machine Screw, Nickel Plated	004019
8-32 x 3/8" Round Head Stainless Steel Machine Screw	004118



Partial Power down mechanism wiring for Model S Electric Crossing Gate
For 12 Volt D.C. Operation

MODEL "S"

HIGHWAY CROSSING SIGNAL
AND
MAST MOUNTED GATE WITH SIDE-WALK ARM

ASSEMBLY NO. S-24SW

**WITH GATE AND COUNTERWEIGHT ARMS
TO ACCOMODATE STREET ARMS**

14′ to 24′

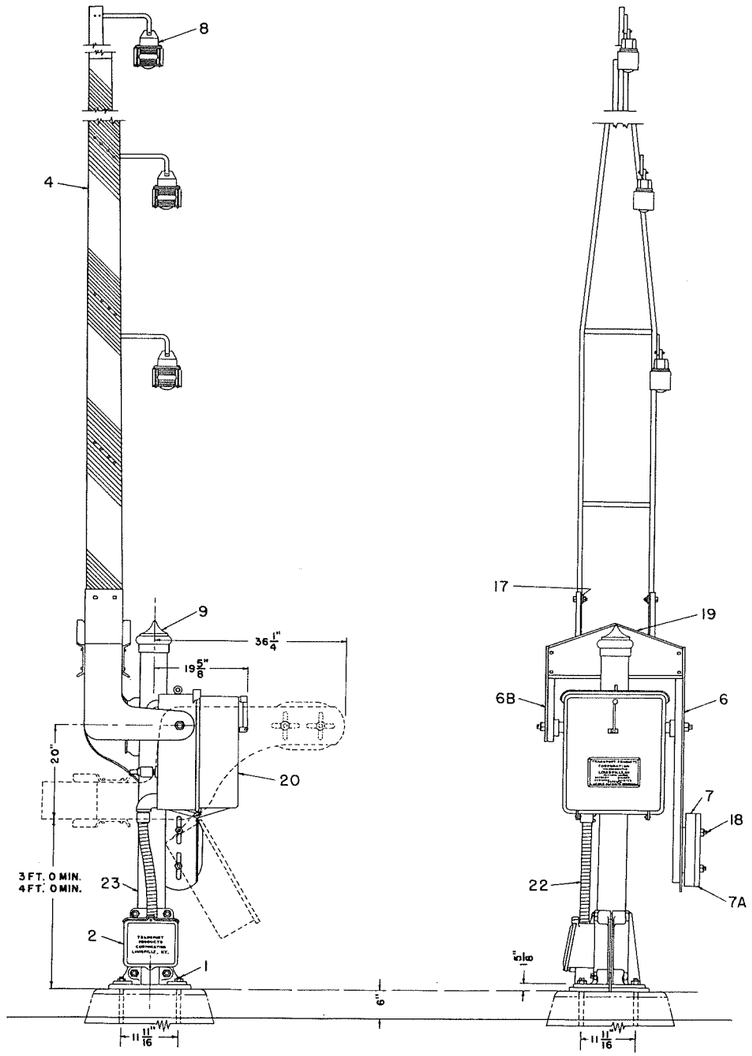
ORDERING REFERENCE

**MODEL "S" HIGHWAY CROSSING SIGNAL
AND AUTOMATIC GATE WITH SIDE-WALK ARM,
ASSEMBLY NO. S-24SW**

SPECIFY

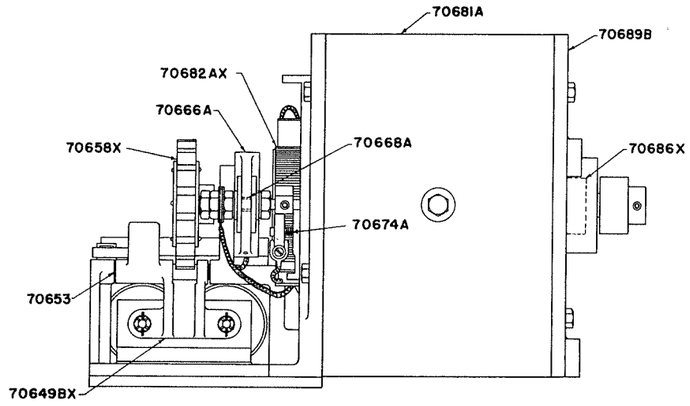
1. Length of street arm.
2. Length of side-walk arm.
3. Numeral on "Number of Tracks" sign.
4. Crossing Bell (Type 222FR will be furnished unless otherwise specified).
5. Any variation of assembly as detailed on opposite page.
   See Page 22 for detailed ordering references.

NOTE: All mechanisms are furnished with partial power-down arrangement and motor-snub relay.



ASSEMBLY NO. S-24S

Model "S" Motor



Front View

ORDERING REFERENCES

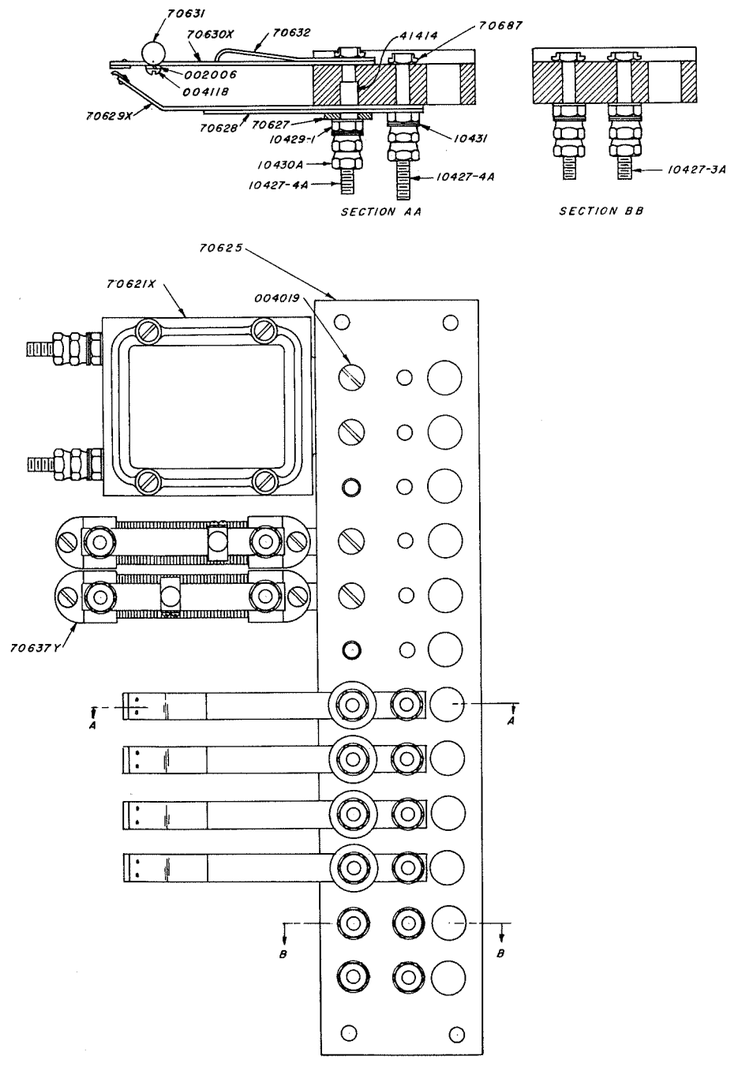
For

DETAILED PARTS

Model "S" Gate Motor

	DRAWING NUMBER
MODEL "S" GATE MOTOR COMPLETE WITH HOLD CLEAR MECHANISM	70640BY
Partial Power Down Contact Assembly Complete	70006-1A
Motor Pinion with Set Screw	70554A
Wire Clamp	70644B
Hold Clear Core	70646
Hold Clear Armature Complete	70647X
Hold Clear Armature Bracket Complete	70649BX
Adjusting Nut	70650
Adjusting Spring	70651
Hold Clear Armature Pivot	70652
Washer	70653
Hold Clear Ratchet Assembly Complete	70658X
Hold Clear Stop	70662A
Hold Clear Coil (250 Ohms Each)	70665
Pick Up Coil (12.5 Ohms Each)	70665-1
Brush Support	70666A
Brush Holder	70667A
Brush Holder Insulating Bushing	70668A
Brush Holder Insulating Washer	70669A
Brush Holder Stud	70670A
Brush Stud Washer	70671A
Brush Tension Arm	70673A
Brush Torsion Spring	70674A
Brush	70675AX
Motor Housing	70681A
Motor Armature	70682AX
Motor Field Coil	70683AX
Motor Ball Bearings	70686X
Motor Rear End Bell	70689B

Model "S" Terminal Board



See Facing Page For Ordering References

MODEL "S"

HIGHWAY CROSSING SIGNAL AND MAST MOUNTED GATE WITH SIDE-WALK ARM

ASSEMBLY NO. S-45SW

WITH GATE AND COUNTERWEIGHT ARMS TO ACCOMODATE STREET ARMS

39′ to 45′

This assembly is the same as shown on Drawing S-24SW except longer gate and counterweight support arms are used on both sides as shown on Assembly S-45, Page 6.

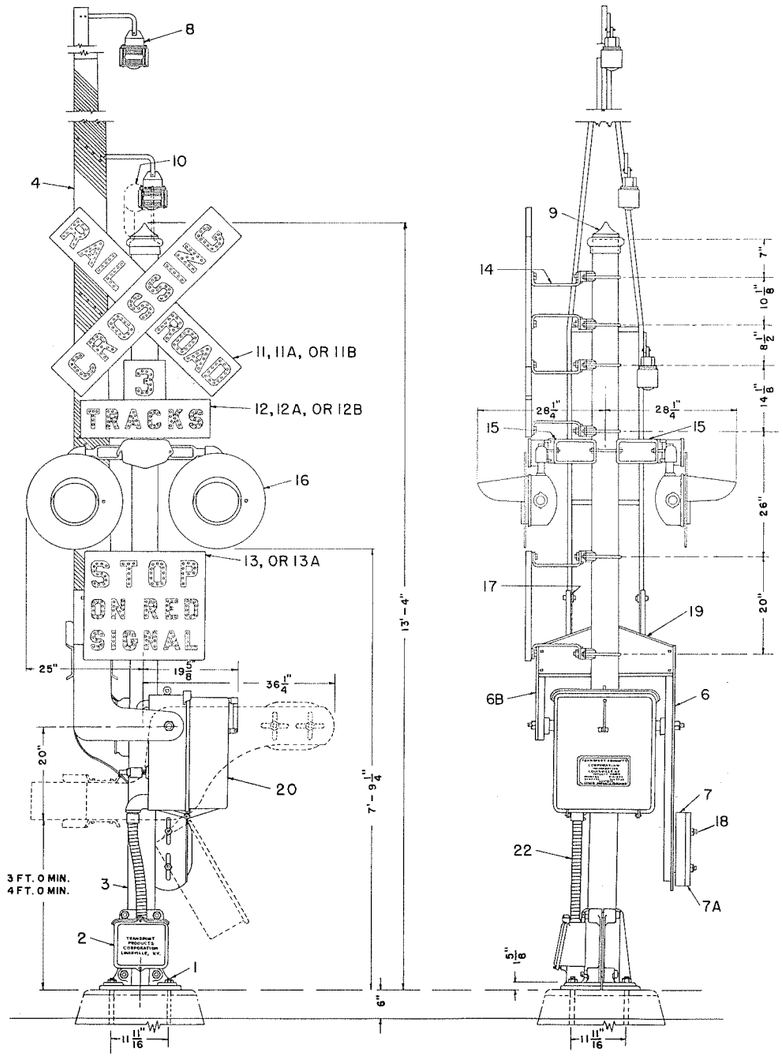
ORDERING REFERENCE

MODEL "S" HIGHWAY CROSSING SIGNAL AND AUTOMATIC GATE WITH SIDE-WALK ARM, ASSEMBLY NO. S-45SW

SPECIFY

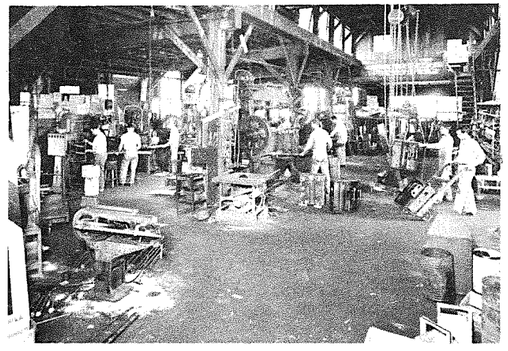
1. Length of street arm.
2. Length of side-walk arm.
3. Numeral on "Number of Tracks" sign.
4. Crossing Bell (Type 222FR will be furnished unless otherwise specified).
5. Any variation of assembly.
   See Page 22 for detailed ordering references.

NOTE: All mechanisms are furnished with partial power-down arrangement and motor-snub relay.

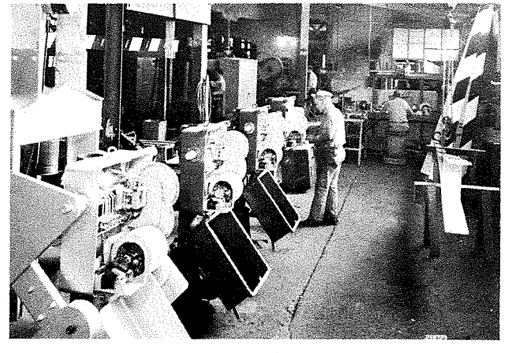


ASSEMBLY NO. S-24

Machine Department



Sheet Metal Department



Gate Assembly Department

Date In Service_____

Counter Reading_____

Serial Numbers_____

Motor Serial Numbers_____

Length of Gate Arm_____

Length of Sidewalk Arm_____

Voltage Readings_____

Current Readings_____

MEMORANDUM_____

MODEL "S"

Highway Crossing Signal, Flashing Light Type with suspended lights and mast mounted Gate Assembly.

CONFORMS

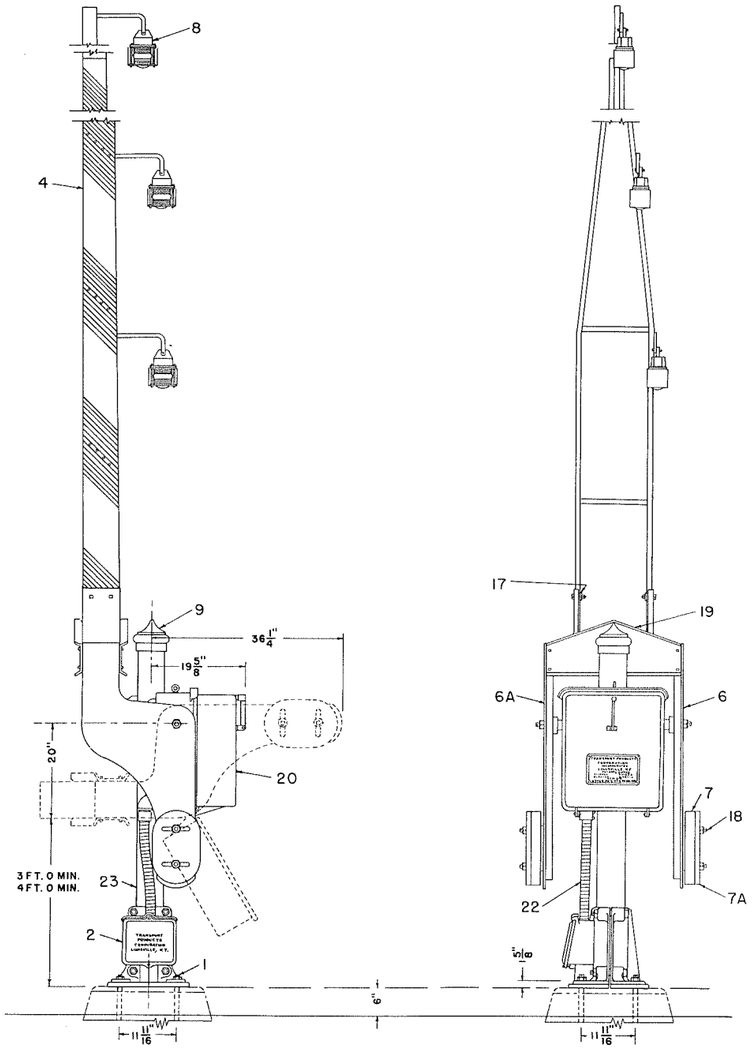
to all Association of American Railroads Signal Section Specifications and is the result of some thirty odd years of railroad Signal equipment manufacturing experience.

THE FIRST

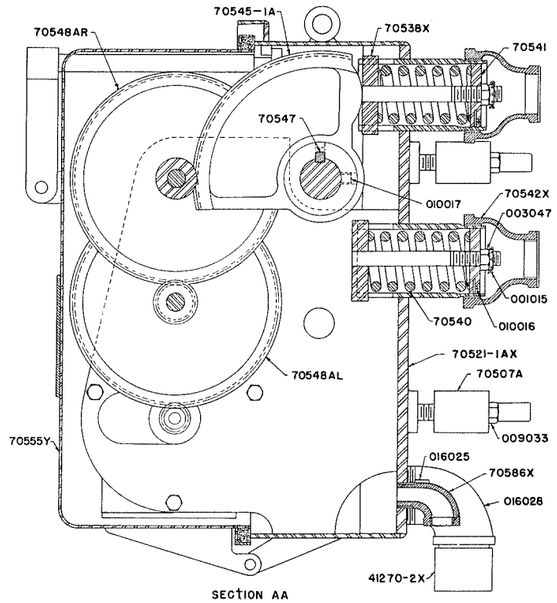
Automatic Gate was placed in service by us on May 15, 1930 — during these past twenty odd years of continuous Gate manufacturing we have always kept the maintainers in mind — simplicity of design and above all easy accessibility.

STANDARD EQUIPMENT

of a Model "S" Mechanism is a motor-snub relay *A N D* partial power down arrangement is furnished whether or not specified and may be used at your discretion.



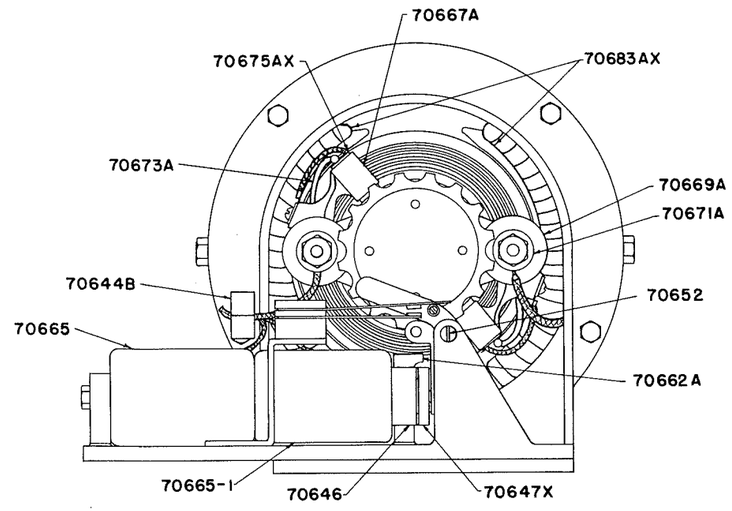
ASSEMBLY NO. S-38S



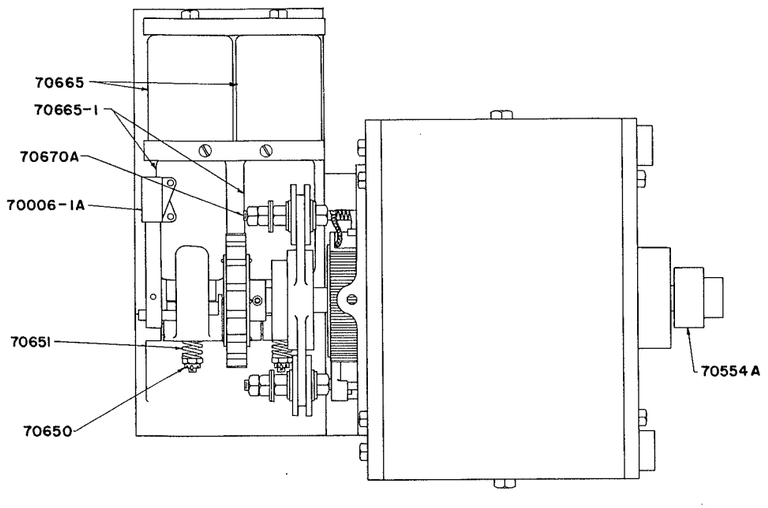
SECTION AA

ORDERING REFERENCES
For
DETAILED PARTS
Model "S" Gate Mechanisms

	DRAWING NUMBER
No. 1636 Alemite Hydraulic Fitting 45 Degree	70593X
Terminal Board Complete	70625-1X
Contact Cam Complete	70633X
Motor Complete With Hold Clear	70640BY
½" Box Connector (National Electric E2-Hinged Strap Type, No. 2163 or Equal)	70688X
Seal Plate	70746
⅛" x 1" Steel Spring Cotter, Cadmium Plated	001015
½" Steel Lock Washer, Plain Type	002003
½"-20 Light Hexagon Steel Nut, Cadmium Plated	003035
1"-14 Light Hexagon Steel Nut, Cadmium Plated	003046
⅝"-18 Light Steel Castle Nut, Cadmium Plated	003047
10-32 x ⅜" Round Head Brass Machine Screw, Nickel Plated	004006
10-32 x ¾" Round Head Brass Machine Screw, Nickel Plated	004007
14-24 x 1-¾" Round Head Brass Machine Screw, Nickel Plated	004019
⅜" x 1" Round Head Iron Rivet	008033
¼"-28 x ½" Hexagon Head Steel Cap Screw, Cadmium Plated	009032
¾"-11 x 4-½" Hexagon Head Steel Cap Screw, Cadmium Plated	009033
½"-20 x 1" Hexagon Head Steel Cap Screw, Cadmium Plated	009036
½"-13 x 1-¼" Hex Head Steel Cap Screw	009040
¼"-20 x ¼" Socket Set Screw, Cadmium Plated	010016
½"-13 x ½" Socket Set Screw, Cadmium Plated	010017
½" Galvanized Malleable Iron 90 Deg. Street Elbow	016001
2" Galvanized Malleable Iron Pipe Plug	016025
2" Galvanized Malleable Iron 90 Deg. Street Elbow	016028
UX Woodruff Key	020001



End View



Top View

MODEL "S"

MAST MOUNTED GATE ON STUB POLE

ASSEMBLY NO. S-24S

WITH GATE AND COUNTERWEIGHT ARMS TO ACCOMODATE STREET ARMS

14′ to 24′

ORDERING REFERENCE

MODEL "S" MAST MOUNTED AUTOMATIC GATE ON STUB POLE, ASSEMBLY NO. S-24S

SPECIFY

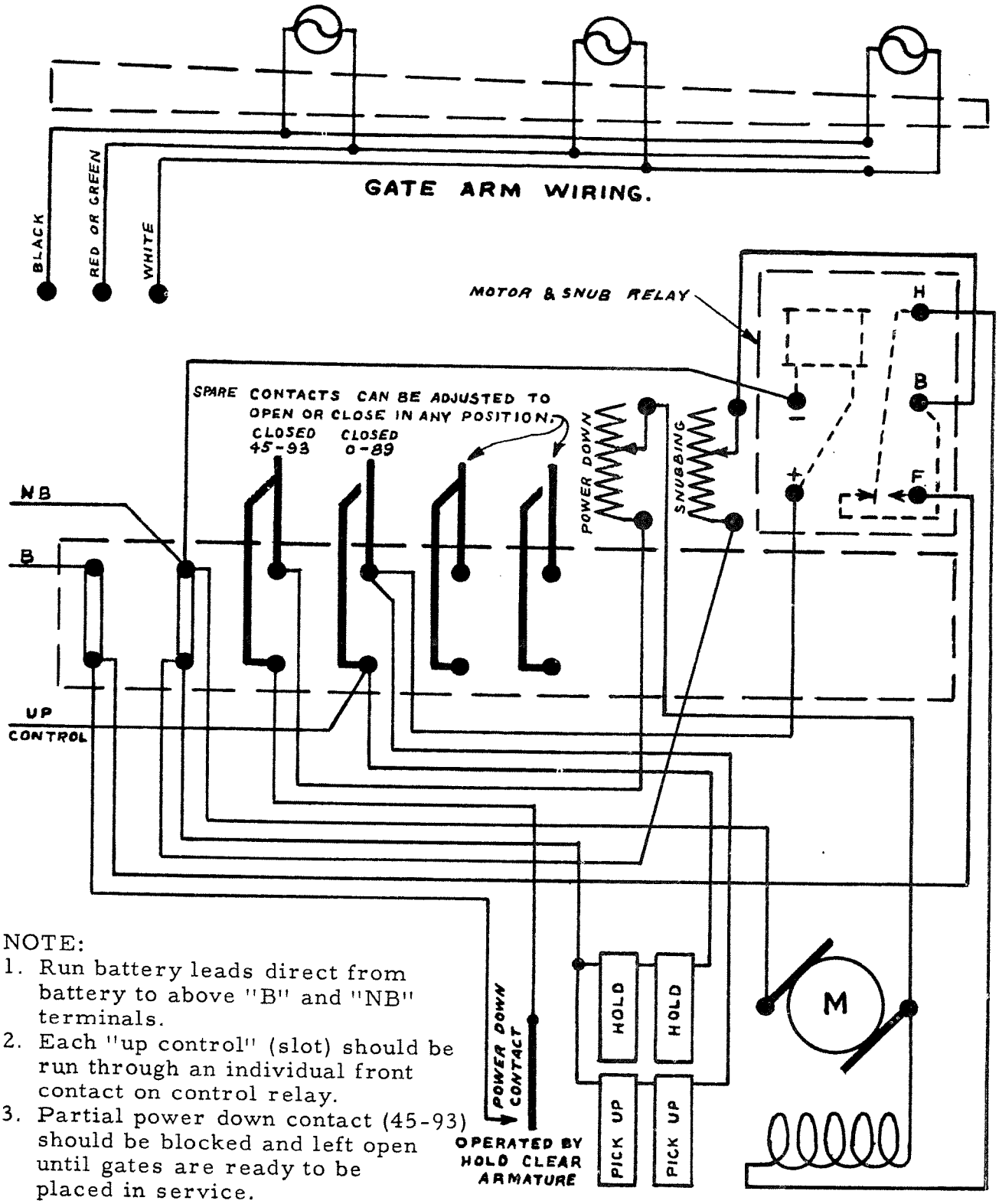
1. Length of street arm.
2. Crossing Bell (Type 222FR will be furnished unless otherwise specified).
3. Any variation of assembly as detailed on opposite page.
   See Page 22 for detailed ordering references.

NOTE: All mechanisms are furnished with partial power-down arrangement and motor-snub relay.

All mechanisms are arranged so that side-walk arms can be installed in the field without machine work or dismantling of mechanism.

If specified the side-walk arm shaft will be installed with protecting cap for exposed end.

TRANSPORT PRODUCTS CORPORATION, LOUISVILLE, KY.



NOTE:

1. Run battery leads direct from battery to above "B" and "NB" terminals.
2. Each "up control" (slot) should be run through an individual front contact on control relay.
3. Partial power down contact (45-93) should be blocked and left open until gates are ready to be placed in service.

PARTIAL POWER DOWN MECHANISM WIRING FOR MODEL S ELECTRIC CROSSING GATE.

D. V. MAHER & CO.
AGENT
900 MARSHALL BUILDING
CLEVELAND 13, OHIO